

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** ~~A~~ An isolated mammalian cell comprising
 - a. a responsive transcription factor (RTF) selected from *Aspergillus nidulans* AlcR protein and an RTF derived from *Aspergillus nidulans* AlcR protein comprising conservative amino acid substitutions and being more than 90% identical to the *Aspergillus nidulans* AlcR protein, which modulates transcription of ΘP operator-containing promoters in response to compounds being gaseous or liquid at ~~the~~ cultivation temperature of said mammalian cell; and
 - b. a promoter or promoter fragments operatively linked to P_{alcA} ΘP operator sites specific for binding of said RTF *Aspergillus nidulans* AlcR protein obtained by amplifying said operator sites from an P_{alcA} containing vector with oligonucleotides OWW58 (5'-gatcgacgtcggagctaccatccaataaccc-3', SEQ ID NO:1) and OWW59 (5'-gatccctgcaggcccgctcggttggtgctct-3', SEQ ID NO:2).
2. **(Currently Amended)** The mammalian cell of claim 1 or 28 further comprising a nucleic acid encoding a desired protein functionally linked to said promoter or promoter fragments operatively linked to the P_{alcA} ΘP operator sites specific for binding an RTF *Aspergillus nidulans* AlcR protein.
3. **(Currently Amended)** The mammalian cell of claim 1 or 28, wherein binding of the RTF to ΘP operator-containing promoters is changed in response to compounds being gaseous at ~~the~~ cultivation temperature of said mammalian cell.
4. **(Currently Amended)** The mammalian cell of claim 1 or 28, wherein binding of the RTF to ΘP operator-containing promoters is changed in response to compounds being liquid

at ~~the~~ cultivation temperature of said mammalian cell.

5.-8. **(Cancelled)**

9. **(Currently Amended)** A non-human mammal comprising at least one mammalian cell as claimed in claim 1 or 28.
10. **(Withdrawn)** A method for adjusting the expression level of a desired protein in a mammalian cell as claimed in claim 2, comprising culturing said mammalian cell and modulating gene expression by administration of a compound for which transcription of the OP operator-containing promoter and the responsive transcription factor RTF are responsive.
11. **(Withdrawn)** The method of claim 10, wherein the protein is selected from the group consisting of SEAP, a fluorescent protein, human growth hormone, alpha-interferon, beta-interferon, gamma-interferon, insulin, erythropoietin, tissue plasminogen activator, DNase, a monoclonal antibody, Factor VIII, Factor VII, HAS, IL-2, glucagons, EGF, GCSF, GMCSF, thrombopoietin, gp160, HbSAg, a protein encoded by a tumor suppressor gene, and a protein encoded by a gene interfering with absorption, distribution, metabolism and excretion of compounds contained in tobacco smoke.
12. **(Withdrawn)** The method of claim 10, wherein the compound for modulating gene expression is selected from the group consisting of ketones, aldehydes, haloalkanes, alcohols, esters, amines, and ethers.
13. **(Withdrawn)** The method of claim 10, wherein the compound for modulating gene expression is selected from the group consisting of ethanol, methylamine, ethylamine, n-

propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone, and compounds that are metabolized *in situ* to said members of the group.

14. **(Withdrawn)** The method of claim 10, wherein the compound for modulating gene expression is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone.
15. **(Withdrawn)** The method of claim 10, wherein the RTF comprises amino acid sequences related to or derived from non-mammalian proteins.
16. **(Withdrawn)** The method of claim 10 wherein the RTF is the *Aspergillus nidulans* AlcR protein and the compound for modulating gene expression is acetaldehyde.
17. **(Withdrawn)** A method for adjusting the expression level of a gene in a mammalian cell as claimed in claim 1, comprising
 - a. functionally linking said gene to an OP-containing promoter,
 - b. transferring said OP-containing promoter functionally linked to said gene into said mammalian cell, and

- c. inducing expression of said gene by activating said OP-containing promoter by administration of a compound for which the OP operator-specific responsive transcription factor RTF is responsive.
18. **(Withdrawn)** The method of claim 17, wherein the gene codes for a protein selected from the group consisting of SEAP, a fluorescent protein, human growth hormone, alpha-interferon, beta-interferon, gamma-interferon, insulin, erythropoietin, tissue plasminogen activator, DNase, a monoclonal antibody, Factor VIII, Factor VII, HAS, IL-2, glucagons, EGF, GCSF, GMCSF, thrombopoietin, gp160, and HbSAg.
19. **(Withdrawn)** The method of claim 17, wherein the gene is a tumor suppressor gene.
20. **(Withdrawn)** The method of claim 17, wherein the gene is a gene interfering with absorption, distribution, metabolism and excretion of compounds contained in tobacco smoke.
21. **(Withdrawn)** The method of claim 17, wherein the compound for which the OP operator-specific responsive transcription factor RTF is responsive is selected from the group consisting of ketones, aldehydes, haloalkanes, alcohols, esters, amines, and ethers.
22. **(Withdrawn)** The method of claim 17 wherein the compound for which the OP operator-specific responsive transcription factor RTF is responsive is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol,

ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone, and compounds that are metabolized *in situ* to said members of the group.

23. **(Withdrawn)** The method of claim 17 wherein the compound for which the OP operator-specific responsive transcription factor RTF is responsive is selected from the group consisting of ethanol, methylamine, ethylamine, n-propylamine, n-butylamine, n-pentylamine, n-hexylamine, benzylamine, 2-butanone, ethanol, n-propanol, n-butanol, 2-propanol, 2-butanol, 2-methylbutyraldehyde, acetaldehyde, propanal, acetone, 2-butanone, 2-pentanone, 3-pentanone, cyclohexanone, glycoaldehyde, glyoxal, glyoxylate, ethylene glycol, ethanolamine, ethyl acetate, ethyl ether, and dicyclopropylketone.
24. **(Withdrawn)** The method of claim 17 wherein the OP-containing promoter is an AlcR-specific OP site, RTF is the *Aspergillus nidulans* AlcR protein, and the compound for which RTF is responsive is acetaldehyde.
25. **(Withdrawn)** An isolated nucleic acid useful for constructing a mammalian cell as claimed in claim 1, comprising an RTF-encoding nucleic acid functionally linked to a promoter useful for expression of the RTF in said mammalian cell.
26. **(Withdrawn)** The isolated nucleic acid of claim 25 comprising an OP sequence functionally linked to a promoter or a fragment thereof useful for RTF-dependent gene expression in said mammalian cell.
27. **(Withdrawn)** The isolated nucleic acid of claim 25 further comprising genetic elements useful for construction of viral vectors.

28. (New) The mammalian cell of claim 1, wherein the responsive transcription factor (RTF) is *Aspergillus nidulans* AlcR protein.